

WHAT IS CLAIMED IS:

1 1. A method for provisioning services to packets sourced  
2 from a number of client devices, each of the packets having  
3 at least a part of a layer 2 header replaced with a unique  
4 bit string, the method comprising:

5 a) determining whether or not the packet is entitled  
6 to access a particular service based on at least a  
7 portion of at least one of (a) a layer 3 address of  
8 the packet, and (b) the unique bit string; and  
9 b) if it is determined that the packet is entitled to  
10 access the particular service, then routing the  
11 packet.

1 2. The method of claim 1 wherein at least a portion of the  
2 unique bit string represents one of a number of logical  
3 interfaces.

1 3. The method of claim 1 wherein at least a portion of the  
2 unique bit string corresponds to a VPN-OUI.

1 4. The method of claim 1 wherein at least a portion of the  
2 unique bit string corresponds to a VPN-INDEX.

1 5. A method for providing various quality of service  
2 levels to packets sourced from a number of client devices,  
3 each of the packets having at least a part of a layer 2  
4 header replaced with a unique bit string, the method  
5 comprising:

6 a) determining a service level to which the packet is  
7 entitled based on at least a portion of at least one

8 of (a) a layer 3 address of the packet, and (b) the  
9 unique bit string; and  
10 b) forwarding the packet to a queue associated with  
11 the service level determined.

1 6. The method of claim 5 wherein at least a portion of the  
2 unique bit string represents one of a number of logical  
3 interfaces.

1 7. The method of claim 5 wherein at least a portion of the  
2 unique bit string corresponds to a VPN-OUI.

1 8. The method of claim 5 wherein at least a portion of the  
2 unique bit string corresponds to a VPN-INDEX.

1 9. A method for monitoring packets sourced from a group of  
2 client devices defining a subset of client devices, each of  
3 the packets having at least a part of a layer 2 header  
4 replaced with a unique bit string, the method comprising:  
5 a) determining whether or not the packet belongs to  
6 the group of client devices based on at least a  
7 portion of at least one of (a) a layer 3 address of  
8 the packet, and (b) the unique bit string; and  
9 b) if it is determined that the packet does belong to  
10 the group of client devices, then  
11 i) copying the packet to generate a duplicate  
12 packet, and  
13 ii) forwarding the duplicate packet to a  
14 monitoring facility.

1 10. The method of claim 9 wherein at least a portion of  
2 the unique bit string represents one of a number of logical  
3 interfaces.

1 11. The method of claim 9 wherein at least a portion of  
2 the unique bit string corresponds to a VPN-OUI:

1 12. The method of claim 9 wherein at least a portion of  
2 the unique bit string corresponds to a VPN-INDEX.

1 13. An apparatus for provisioning services to packets  
2 sourced from a number of client devices, each of the  
3 packets having at least a part of a layer 2 header replaced  
4 with a unique bit string, the apparatus comprising:

- 5 a) an access control list; and
- 6 b) an access controller, the access controller  
7 including
  - 8 i) means for determining whether or not the  
9 packet is entitled to access a particular service  
10 based on
    - 11 A) contents of the access control list, and
    - 12 B) at least a portion of at least one of
    - 13 (a) a layer 3 address of the packet, and (b)
    - 14 the unique bit string, and
  - 15 ii) means for routing the packet if it is  
16 determined that the packet is entitled to access  
17 the particular service.

1 14. An apparatus for providing various service levels to  
2 packets sourced from a number of client devices, each of  
3 the packets having at least a part of a layer 2 header

4 replaced with a unique bit string, the apparatus  
5 comprising:

6 a) a plurality of queues, each of the plurality of  
7 queues associated with a particular service level;  
8 b) a service level list; and  
9 c) a service level controller, the service level  
10 controller including  
11 i) means for determining a service level to  
12 which the packet is entitled based on  
13 A) contents of the service level list, and  
14 B) at least a portion of at least one of  
15 (a) a layer 3 address of the packet, and (b)  
16 the unique bit string, and  
17 ii) means for forwarding the packet to the one  
18 of the plurality of queues associated with the  
19 quality of service level determined.

1 15. An apparatus for monitoring packets sourced from a  
2 group of client devices defining a subset of client  
3 devices, each of the packets having at least a part of a  
4 layer 2 header replaced with a unique bit string, the  
5 apparatus comprising:

6 a) a monitoring port for accepting packets of the  
7 group of client devices to be monitored;  
8 b) means determining whether or not an accepted  
9 packet belongs to the group of client devices based on  
10 at least a portion of at least one of (a) a layer 3  
11 address of the packet, and (b) the unique bit string;  
12 and  
13 c) means for  
14 i) copying the accepted packet to generate a  
15 ~~duplicate packet, and~~

ii) forwarding the duplicate packet to the monitoring port,

if it is determined that the packet was sourced by a client device belonging to the group of client devices.

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Add A / Add B  
Add C / Add D  
Add E

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